



mobile care: scalable imaging and
diagnosis for the developing world

moca is a customizable, remote medical diagnostics platform for health workers in developing nations.



it is an **end-to-end system** that seamlessly connects health workers in the field to centralized medical experts.

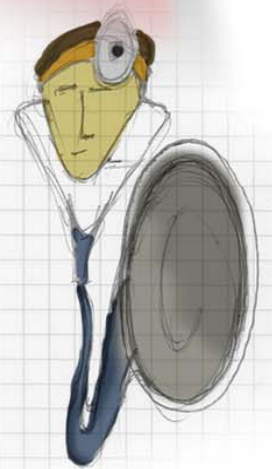
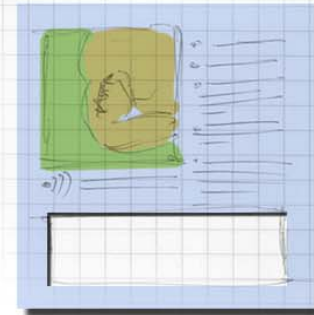
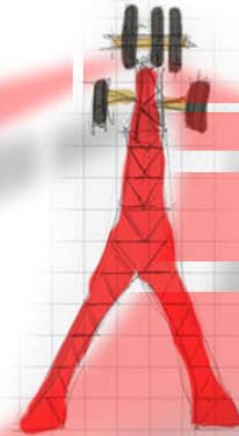
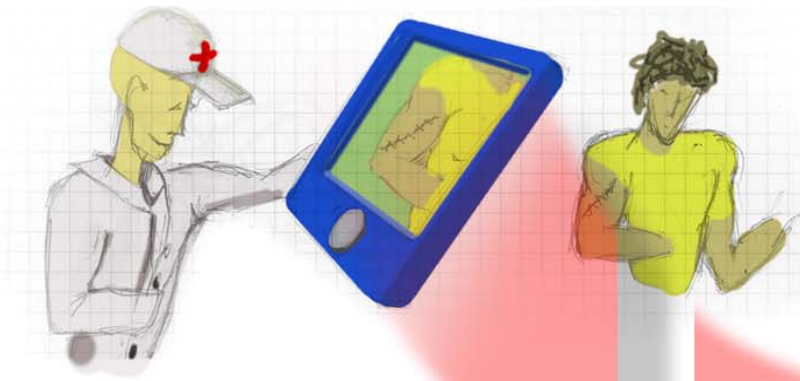
objective

a **lack of trained physicians** is one of the largest issues facing healthcare in the developing world.

Photo removed due to copyright restrictions.
A group of African children.

patients often make long journeys to clinics, only to be referred to **expensive and far away** medical centers for a diagnosis

paper based medical records further contribute to inefficiencies



**system
architecture**



Doctor creates custom procedure on OpenMRS



Moca downloads and stores procedure for nurse to use



moca workflow



Nurse collects and uploads data



Doctor grabs case from queue and reviews it



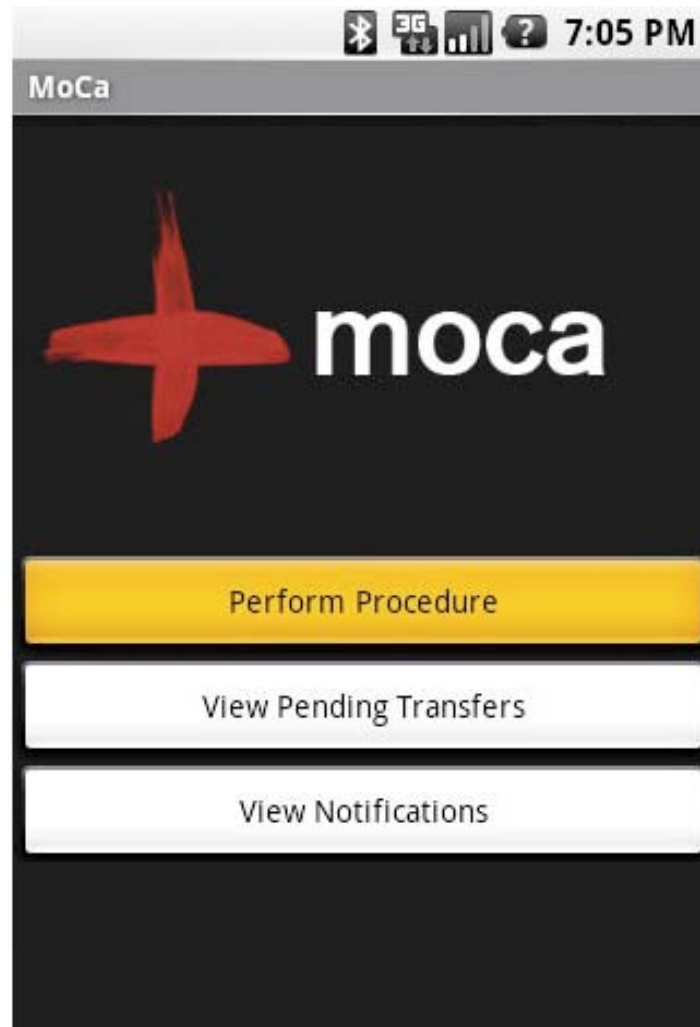
Moca informs nurse of diagnosis result

features

- user customizable medical decision trees and forms
- image and audio file support
- integration with medical record system standard
- workflow management for efficient utilization of remote medical experts
- data transfer optimized for poor coverage areas
- open source platform

OpenMRS Integration

- Free and open source electronic medical records system
- Designed for use in developing countries
- Lead by Regenstrief Institute and Partners In Health
- Active deployments in several African and Latin American countries



demo

Centers for E-health + Telemedicine:

Universiti Sains Malaysia (Malaysia)

Institut dela Francophonie pour Medicine Tropicale (Laos)

University of the Philippines Manila (Philippines)

University of Gadjah Mada (Indonesia)

Ciputra Univerity (Indonesia)

Hanoi Medical University (Vietnam)

November 2008: initial local presentation
January – March 2009: planned travel to Philippines for prelim work and assessments
May 2009: pilot study deployed in Capiz :
ophthalmology + dermatology

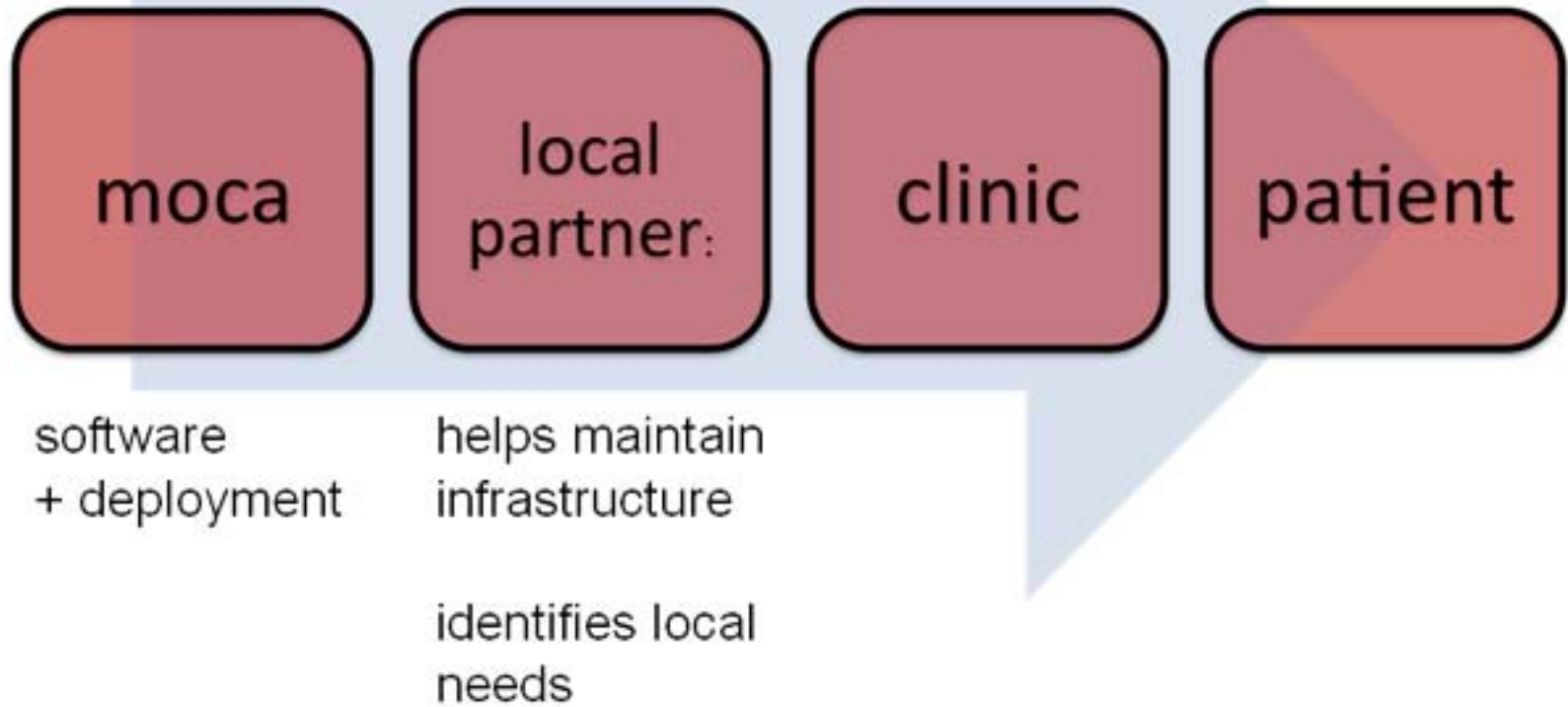
deployment

pilot study costs are fully covered through support from the **WHO** and the **Filipino Department of Health**



startup cost: \$1200
(server)+ \$200-\$400
per phone

running cost: \$0 - \$100
per phone, month



open source software platform means low cost of deployment, no proprietary data formats, re-use of code and sharing of expertise



Development:

Clark Freifeld
Two anonymous
MIT students
RJ Ryan

Operations/

Sustainability:
Santiago Alfaro
Ted Chan
Sameer Hirji
Crystal Mao

Media/

Communications:
Elliot Higger
Nicole Prowell

Advisors:

Leo Celi
Gari Clifford
Luis Sarmenta

MIT OpenCourseWare
<http://ocw.mit.edu>

MAS.965 / 6.976 / 6.034 NextLab I: Designing Mobile Technologies for the Next Billion Users
Fall 2008

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.